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SHORT COMMUNICATION

Documentation of the Black-Footed Ferret, *Mustela nigripes* on the Standing Rock Indian Reservation, Mobridge, South Dakota

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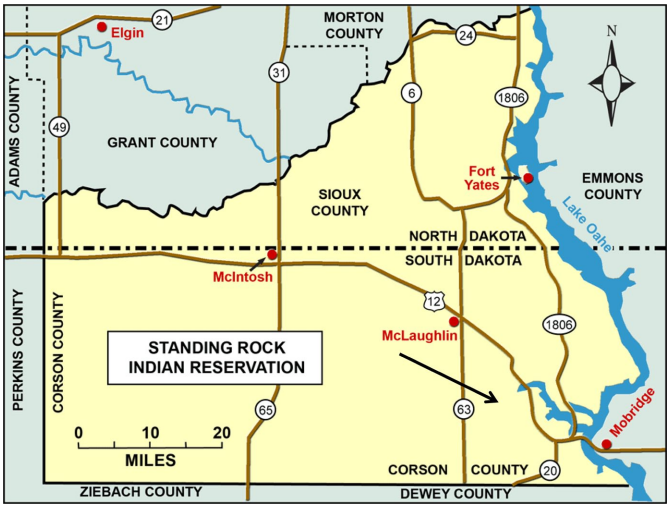
The black-footed ferret, *Mustela nigripes,* is a small to medium-sized carnivore. Female black-footed ferrets range in weight 645–850, males ranges from 915–1,125 grams. *Mustela nigripes* ranges in length from 380–600 mm (head and body), with male black-footed ferrets measuring ~10% longer. The fur of *Mustela nigripes* is yellowish-buff with pale under parts. The forehead, muzzle and throat are white, and the feet are black. A black mask is observed around the eyes, which is well defined in young black-footed ferrets (Wilson & Ruff 1999, Nowak 1991, Hillman & Clark 1980). It is the only ferret species native to the Americas, and there are no recognized subspecies. These solitary animals give birth in May and June with an average litter size of 3 kits (Hillman 1968, Linder et al. 1972, Forrest et al. 1988). However, litters of 7 have been observed in the wild and litters of 8–9 have been documented in captivity (Branvold et al. 2003). Young are able to survive on their own by fall (Hillman and Clark 1980), when they disperse. At present, known ferret populations exist only at reintroduction sites where introduced populations remain small, fragmented, and intensively managed with only a few of these introduced populations producing wild-born adults. As a result of the bottleneck of the captive breeding program, black-footed ferrets have lost 90% of their genetic diversity (Wisely 2005). Such a drastic decrease in genetic diversity can lead to inbreeding depression and reduced fitness, including immune system dysfunction and reduced reproductive success (Biggins and Schroeder, 1988).

The Standing Rock Sioux Tribe (SRST) initiated black-footed ferret surveys in early October 2012, in Corson County west of the Missouri River, in north-central South Dakota, part of the Northwestern Great Plains ecoregion. According to the Black–tailed Prairie Dog Conservation and Management Plan (Cooper 2005), there are 26,213 acres (10,608.34 ha) of prairie dog towns in Corson County, of which almost 15,000 acres (6070.29 ha) of prairie dog towns are on tribal land.

The black-footed ferret depends on prairie dogs for food and uses their burrows for shelter. There are two acceptable methods to survey black-footed ferrets or ferret sign: nocturnal and diurnal. Nocturnal spotlighting techniques locate ferrets within prairie dog town complexes. Nocturnal spotlight surveys of ferrets were initiated in the



Map courtesy of Standing Rock Sioux Tribe

Grand and Moreau River prairie dog complexes where previous sightings (unconfirmed) had been reported to the SRST Director of Game & Fish. Night surveys were conducted from July 1 to October 31 by spotlighting from dusk to dawn for 3 consecutive nights. If sign suggesting ferret presence was found, which is typically the observation of a distinctive, intense, emerald eye shine, then a 5-night search was conducted. Observations of the prairie dog town being surveyed were initiated at a different starting point on each successive night to maximize the chance of detecting ferret nighttime activities. The survey crew consisted of one vehicle and two observers equipped with one-million candlepower spotlights.

The site where we documented the ferrets was a largely unoccupied prairie dog town where the prairie had regained the ordinary expression of a short-grass prairie. The flora composition included: *Aristida oligantha,* oldfield three-awn, *Bouteloua gracilis,* blue grama, *Artemisia absinthium,* wormwood absinthe*, *Agropyron cristatum,* crested wheatgrass, *Artemisia campestris,* field sagewort, *Artemisia frigida,* prairie sagewort, *Artemisia ludoviciana,* Lousiana sagewort, *Asclepias verticillata,* whorled milkweed, *Aster ref. ontarionis,* willow aster, *Bromus japonicas** Japanese brome, *Grindelia squarrosa,* curly-cup gumweed, *Liastris glabrata,* gayfeather, *Liatris punctata,* dotted gayfeather, *Lotus corniculatus,* bird's-foot

Figure 1. Photograph taken of black-footed ferret (BFF01) on October 31, 2012, on Standing Rock Indian Reservation, South Dakota. This was the largest of three individual ferrets observed.

Figure 3. BFF03 observed with black throat coloration. This ferret was photographed on November 1, 2012, on Standing Rock Indian Reservation, South Dakota.

Figure 2. BFF02 observed on the second night of sampling. No throat coloration was identified on the ferret photographed on November 1, 2012, Standing Rock Indian Reservation, South Dakota. The ferret was observed 100 m from the third ferret, which was observed 36 minutes later in a different location.

Figure 4. Another view of BFF03 illustrating throat coloration. Adults and juvenile ferrets are the same size in November, and thus nearly impossible to age without physical handling.

trefoil*, *Pediomelum (Psoralea) argo- phylla,* silverleaf scurf-pea, *Penstemon grandifloras,* large beard-tongue, *Ratibida columnifera,* prairie coneflower, and *Solidago mollis,* soft goldenrod. The town was approximately 100 acres, with also a small, but increasing prairie dog population (approximately 25 prairie dogs observed).

The first ferret was sighted at 1245 MDT on October 31, 2012 (BFF01, Figure 1), and appeared to be an adult ferret. Our photographs were taken approximately 5 m from the animal. On November 1, two observations (BFF02, Figure 2, and BFF03, Figure 3) were made on the same prairie dog town at 0314 and 0350 MDT, respectively. The two individuals were observed approximately 100 m from each other and one of the individuals (BFF03) had a pale, black fleck (penny-sized) on its throat (Figure 3, 4). The ferrets observed were curious, and approached to within 5 m, but were quick to disappear into nearby abandoned prairie dog burrows as our survey vehicle was repositioned. Over 50 photographs were taken. Through direct observation at short range and intensive study of the many photographs, it is the considered opinion of the authors that three separate individuals were observed. The ferret observed on the night of October 31 was considerable larger than the ferrets observed on the night of November 1, and distinctive differences in fur color and pattern are enough to determine that the observations of November 1 were of two individuals, which could be either adult females or kits, which are often poorly differentiated by size in late October. As black-footed ferrets are territorial, it is highly

unlikely that both of the smaller ferrets observed on the night of November 1 were both adult females. Consequently, at least one of the smaller ferrets observed was likely a kit, which certainly suggests that the ferrets were successfully reproducing on a prairie dog town that had very few prairie dogs due to poisoning in 2011.

Since 1991, 19 specific black-footed ferret reintroduction projects have been conducted across 8 States, Canada, and Mexico. All five of the first ferret reintroductions (from 1991 to 1996) continue to be occupied by ferrets. The photographs of October 31 and November 1 are the first unequivocal documentation of black-footed ferrets on the Standing Rock Indian Reservation. Ferrets observed on Standing Rock may be dispersals from the nearby Cheyenne River Sioux Indian Reservation to the south. The nearest re-introduction site for ferrets is approximately 20 miles away, in Whitehorse, South Dakota, and the observation of ferrets on Standing Rock could document ferrets dispersing from that reintroduction site. The dispersal ability of ferrets is poorly known, but black-footed ferrets will travel up to 11 miles (17 km) to seek prey (Forrest, et al 1985), which certainly suggests that dispersal from Cheyenne River is possible.

This documentation of black-footed ferrets on Standing Rock Indian Reservation warrants further efforts to develop plans to protect, conserve, and manage this rare species, which is currently under assault from habitat loss, disease, poisoning, and human encroachment. The Tribe is committed to a sustained effort to locate potentially isolated, extant populations of ferrets within their thousands of acres of prairie dog towns, the vast majority of which remains unsurveyed. Future management efforts must include not only necessary biological studies relating to the ferret presence, but also genetic testing to determine if located animals are part of reintroduction or relict populations. Finally, black-footed ferret management must also include plans to mitigate the effect of diseases that are afflicting ferret populations and their prey-base at this time.

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